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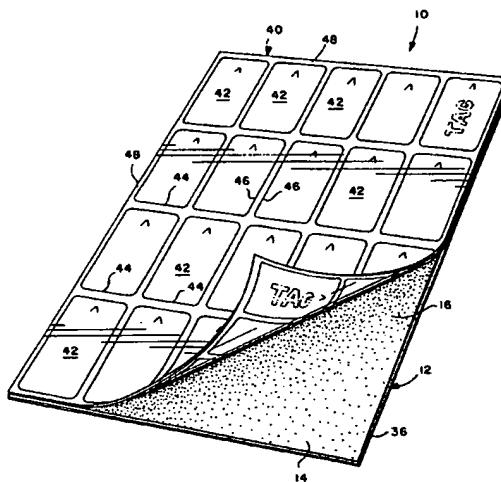
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④ **Combined tag and label assembly and method of forming same.**

④ A combined non-adhesive tag and adhesive label assembly (10) includes a first sheet (12) coated on one side (14) thereof with repositionable adhesive (16), the first sheet having a first plurality of cut lines (18, 20, 22) defining a plurality of adhesive labels (24-34); a second sheet (40) substantially entirely overlying the adhesive side of the first sheet, the second sheet having a second plurality of cut lines (44, 46) therein to define a plurality of non-adhesive tags (42), the tags being removable from the one side of the first sheet. Apparatus (50) for forming a combined non-adhesive tag and adhesive label assembly is also provided which includes a first drum (54) for feeding a continuous tag sheet (52) to a process line (56, 58) and a second drum (64) for feeding a continuous adhesive label sheet (62) to the process line (66, 68). Means are also provided for joining the tag sheet to the adhesive label sheet in substantially overlying relationship to form a double product web, along with die cutting elements (70) for die cutting the tag sheet and the label sheet to define a first plurality of individual tags within the non-adhesive tag sheet, and a second plurality of labels in the label sheet. A third drum (72) is provided for winding the double product web. A method of forming a combined tag and label forms assembly is also disclosed.

FIG. 3



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BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to forms assemblies in general and to a unique combination linerless dry non-adhesive tag and an adhesive shipping label assembly in particular.

Currently, dry tag or dry back labels are manufactured by laminating a continuous roll of paper tag stock to a continuous roll of liner stock using a fugitive adhesive system. The fugitive adhesive is applied to the tag stock and mated to the liner and dried through a conventional dryer system. The laminate is then rewound and shipped to converters for printing, die cutting, perforing, slitting, sheeting, padding or rewinding. This product is very expensive as it is a special order material. These tags can only be printed on one side since delaminating of the tag stock from the liner will result in permanent separation of the web. The end user or customer prints pricing information in bar codes on the tag stock with impact and non-impact printing systems. The tags are then removed from the liner and applied to garments, inventory and retail articles, etc. by inserting a plastic strip or string through the dry tag and joining the dry tag and article together with a clasp. The liner is then discarded. The articles are then placed into corrugated cartons, plastic bins and wooden crates for shipping. Separately formed pressure sensitive labels with content information are then affixed to the shipping units.

Another known method for producing tags and labels, comprises affixing an adhesive coated sheet of tag stock then applying a polyurethane coating to the carrier sheet. The polyurethane coating has a better affinity to the adhesive and when removed from the carrier detackifies the adhesive. This process is also very expensive and allows printing on one aide only.

This invention simplifies the above processes by combining the manufacture of shipping and/or carton identification labels and tag products. In a first exemplary embodiment, a roll of self-wound, linerless repositionable adhesive label stock is unwound, and a continuous non-adhesive tag stock is affixed to the adhesive aide of the label stock. Subsequently, the joined sheets are processed through multiple press stations to form a linerless dry tag/label product in sheet or continuous web form. Eliminating the application of a fugitive adhesive allows the tag stock to be printed on both sides and, of course, the label stock can be printed on its non-adhesive side. Both the non-adhesive dry tag and the adhesive label sheets (individual or in continuous web form) can be die cut and the final laminate can be sheeted or fan-folded. The product can be printed on by both impact and non-

impact printers by the customer, and then removed and affixed to garments or other articles with a plastic strip or string while the adhesive label portion is then affixed to corrugated cartons, shipping crates, etc. Thus, the linerless product in accordance with this invention yields less waste, can be manufactured on press, allows the dry tag to be printed on both sides, and is less expensive.

In accordance with a broad aspect of the invention, therefore, there is provided a combined non-adhesive tag and adhesive label assembly comprising:

5 a first sheet coated on one side thereof with repositionable adhesive, the first sheet having a first plurality of cut lines defining a plurality of adhesive labels;

10 15 a second sheet substantially entirely overlying the one side of first sheet, the second sheet having a second plurality of cut lines therein to define a plurality of dry tags, the tags being removable from the one side of the first sheet.

20 25 In another aspect, the present invention broadly provides a method of forming a combined, non-adhesive tag and adhesive label assembly comprising the steps of:

25 30 35 a) providing a first sheet of label stock, one side of the label stock coated with repositionable adhesive;
b) providing a second sheet of dry tag stock;
c) affixing the sheet of dry tag stock to the adhesive side of the sheet of label stock; and
d) forming a plurality of adhesive labels within the first sheet and a plurality of dry tags within the second sheet.

40 45 50 Additional objects and advantages of the present invention will become apparent from the detailed description which follows.

BRIEF DESCRIPTION OF THE DRAWINGS

40 FIGURE 1 is a top plan view of a dry tag sheet in a combined forms assembly in accordance with this invention;
45 FIGURE 2 is a bottom plan view of the combined assembly shown in Figure 1;
50 FIGURE 3 is a perspective view of the combined forms assembly of this invention, with the dry tag sheet partially removed; and
FIGURE 4 is a side schematic view of a press which may be used to form the combined forms assembly in accordance with this invention.

DETAILED DESCRIPTION OF THE DRAWINGS

55 With reference to Figure 1-3, the forms assembly 10 includes a first sheet or ply 12 coated on one side (the upper side, as shown) 14 with a known repositionable (i.e., light tack) adhesive 16.

The sheet 12 is formed with a plurality of cut lines 18, 20 and 22 which are arranged to define two parallel rows of labels 24, 26, 28 and 30, 32, 34, respectively. In the arrangement shown, cut line 18 extends parallel to the longitudinal direction of the sheet, substantially mid-way between the side edges 36, 38. Cut lines 20 and 22 extend in the width direction, at longitudinally spaced locations, thereby defining the two parallel rows of labels. The labels may each be printed on the side opposite that shown on Figure 1, i.e., on the non-adhesive side shown in Figure 2, by impact or non-impact printers. Thus, as shown, the sheet 12 contains six discrete, self-sticking labels 24, 26, 28, 30, 32 and 34, each printed on the non-adhesive side with appropriate information, depending on the end use of the labels. Shipping or carton identification labels are exemplary.

With reference to Figure 2A, labels 24, 26, 28, 30 and 32 may be connected to longitudinally adjacent labels, along cut lines 20 and 22 (the leading and trailing cut lines in the direction of movement during manufacture) by paper ties 23 of the type disclosed in commonly owned application Serial No. 07/700,774 filed May 15, 1991. These ties prevent the leading label edges from delaminating when subjected to heat during, for example, laser printing.

A second sheet or ply 40 having similar length and width dimensions as sheet 12, overlies the sheet 12, and is adhesively secured to the side 14. The second sheet 40 is die cut to define a plurality of rectangular dry tags 42. The various transverse die cut lines 44 and longitudinal cut lines 46 are arranged to form four parallel rows of tags, each row containing four tags 42. It should be noted that all of the tags 42 lie within the sheet, i.e., a relatively thin marginal area 48 surrounds the sheet 40. It will also be appreciated from the above description, when further viewed in light of Figures 1-3, that the die cut lines 18, 20 and 22 in substrate 12 nowhere align (coincide) with die cut lines 44 and 46. In fact, there is complete flexibility to design the size and shape of the labels 24, etc. and tags 42 independent of each other, within the overall confines of the respective sheets 12 and 40.

Turning now to Figure 4, a suitable apparatus for forming the assembly 10 in continuous web form is shown at 50. Suitable apparatus includes an otherwise conventional Webtron 1600 press. A web 52 which forms a series of longitudinally arranged sheets 40 is supplied from a cylinder 54 and guided by suitable guide rollers to printers 56, 58 which prints the back side of the sheets 40 in areas which will form the dry tags 42.

Once processed beyond the printers 56 and 58, the web 52 is joined at 60 to an adhesive side of a continuous web 62 supplied from the cylinder

64. Web 62 forms a series of label sheets 12, each of which will incorporate a plurality of labels 24, 26, etc. as described above. By joining web 52 to the adhesive side of web 62, the conventional requirement for a liner covering the adhesive is eliminated.

Subsequently, the non-adhesive side of web 62 (i.e., the exposed label side) may be printed at printer stations 66 and/or 68. A die cutting station 70 forms the cut lines on both webs 52 and 62, outlining the individual labels 24, 26, etc. and dry tags 42. The finished assembly, still in continuous web form, is wound on a cylinder 72.

It will be appreciated that the webs 52 and 62 are also die cut or provided with longitudinally spaced, transverse perf lines (not shown) which define individual assemblies 10 (each comprising a sheet 12 and a sheet 40) within the combined web, and which facilitate zig-zag or secondary folding for shipment.

While the invention has been described in connection with what is presently considered to be the most practical and preferred embodiment, it is to be understood that the invention is not to be limited to the disclosed embodiment, but on the contrary, is intended to cover various modifications and equivalent arrangements included within the scope of the appended claims.

30 Claims

1. A combined non-adhesive tag and adhesive label assembly (10) comprising:

a first sheet (12) coated on one side (14) thereof with repositionable adhesive (16), said first sheet having a first plurality of cut lines (18, 20, 22) defining a plurality of adhesive labels (24-30);

a second sheet (40) substantially entirely overlying said one side of said first sheet, said second sheet having a second plurality of cut lines (44, 46) therein to define a plurality of non-adhesive tags (42), said tags being removable from said one side of said first sheet.

2. The assembly of claim 1 characterized in that each of said tags (42) is printed on one or both sides thereof.

3. The assembly of claim 1 or claim 2 characterised in that said first sheet is printed in areas corresponding to each label on a side opposite said one side.

4. The assembly of any of claims 1 to 3 characterized in that said first plurality of cut lines are arranged to define at least two substantially parallel rows of labels (24, 26, 28; 30, 32, 34),

each row containing at least two labels.

- 5. The assembly of any of claims 1 to 4 wherein said second plurality of cut lines are arranged to define at least two substantially parallel rows of tags, each row containing at least two tags. 5
- 6. The assembly of any of claims 1 to 5 characterized in that none of said first and second plurality of cut lines are coincident. 10
- 7. The assembly of any of claims 1 to 6 characterized in that all of said tags lie within marginal areas of said second sheet. 15
- 8. A combined non-adhesive tag and adhesive label assembly comprising:
a continuous web having a length and a width, the web divided by perforation lines spaced along the length of the web and extending transversely along the width of the web to thereby divide the web into a plurality of combined sheet assemblies, each sheet comprising being in accordance with any of claims 1 to 7. 20
- 9. A method of forming a combination linerless, dry tag and label forms assembly comprising the steps of:
(a) providing a first sheet of label stock, one side of said label stock coated with re-positional adhesive; 30
(b) providing a second sheet of dry tag stock;
(c) affixing the sheet of dry tag stock to the adhesive side of the sheet of label stock; and
(d) forming a plurality of adhesive labels within said first sheet and a plurality of dry tags within said second sheet, the sheets being in the form of individual cut lengths or parts of webs during the processing. 35
- 10. The method of claim 9 characterised in that step (d) is carried out by die cutting the first and second sheets and the die cutting is carried out after step (c). 40
- 11. The method of claim 16 wherein said plurality of labels are not commensurate with said plurality of dry tags and/or no cut line of either sheet coincides with a cut line on the other sheet. 45
- 12. The method of claim 16 wherein said plurality of labels are not commensurate with said plurality of dry tags and/or no cut line of either sheet coincides with a cut line on the other sheet. 50

FIG. 1

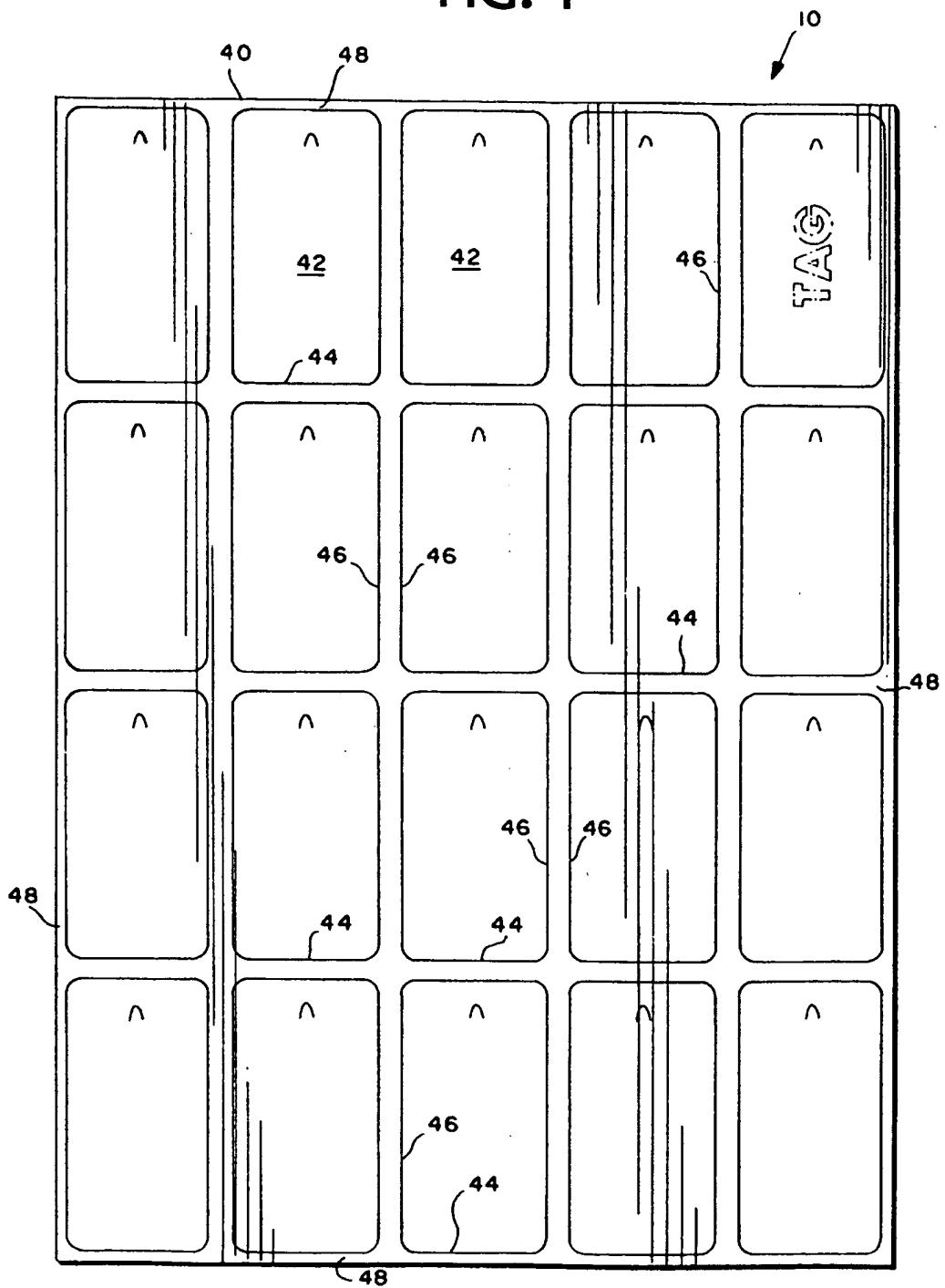


FIG. 2

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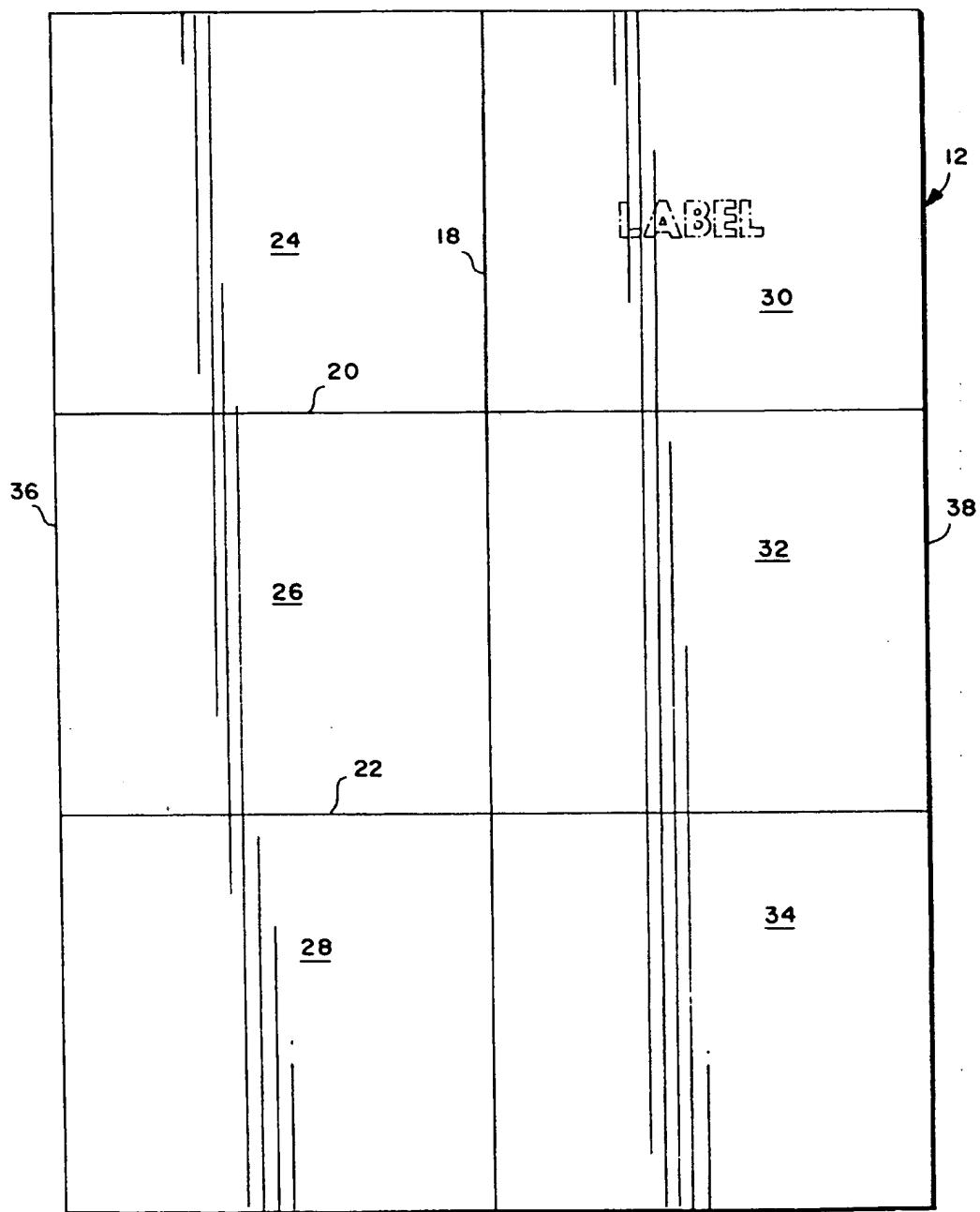


FIG. 3

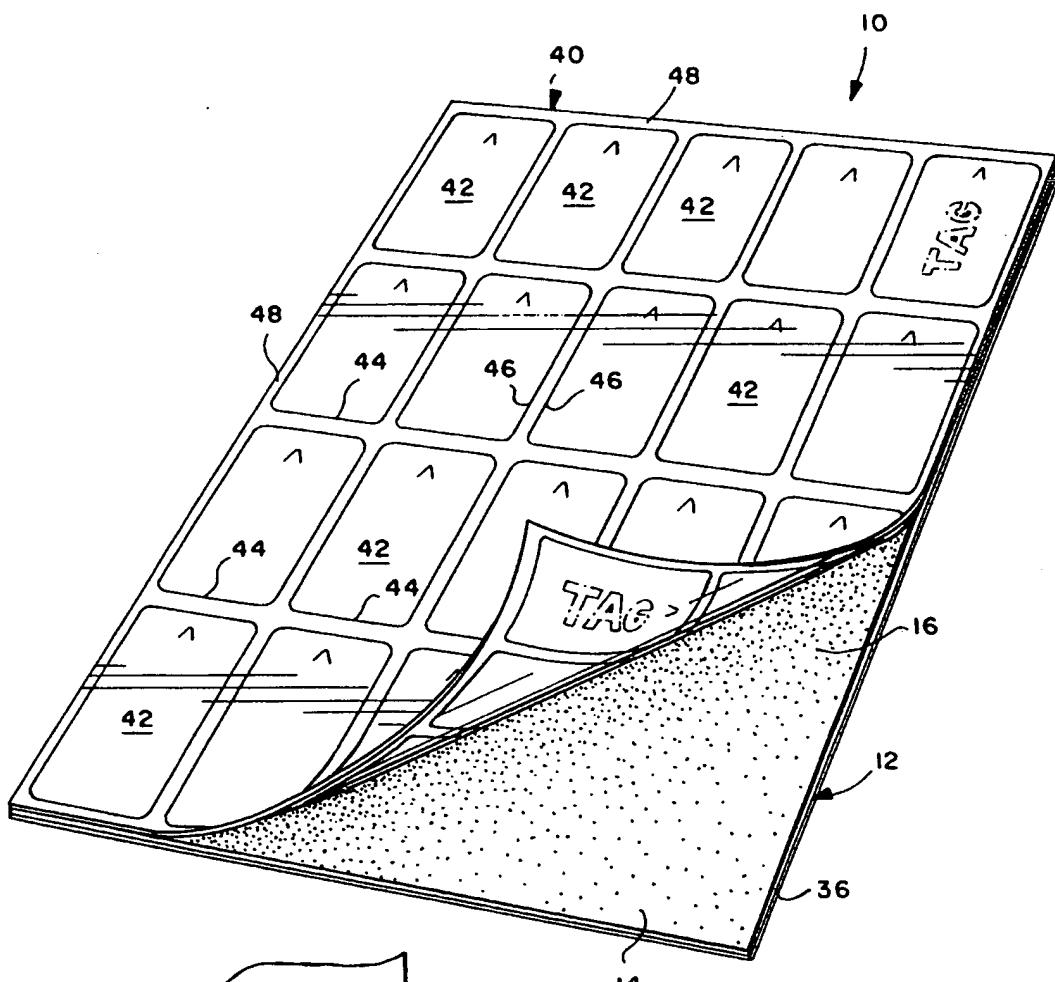


FIG. 2A

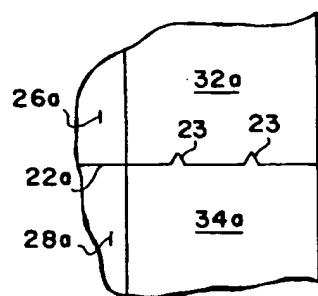
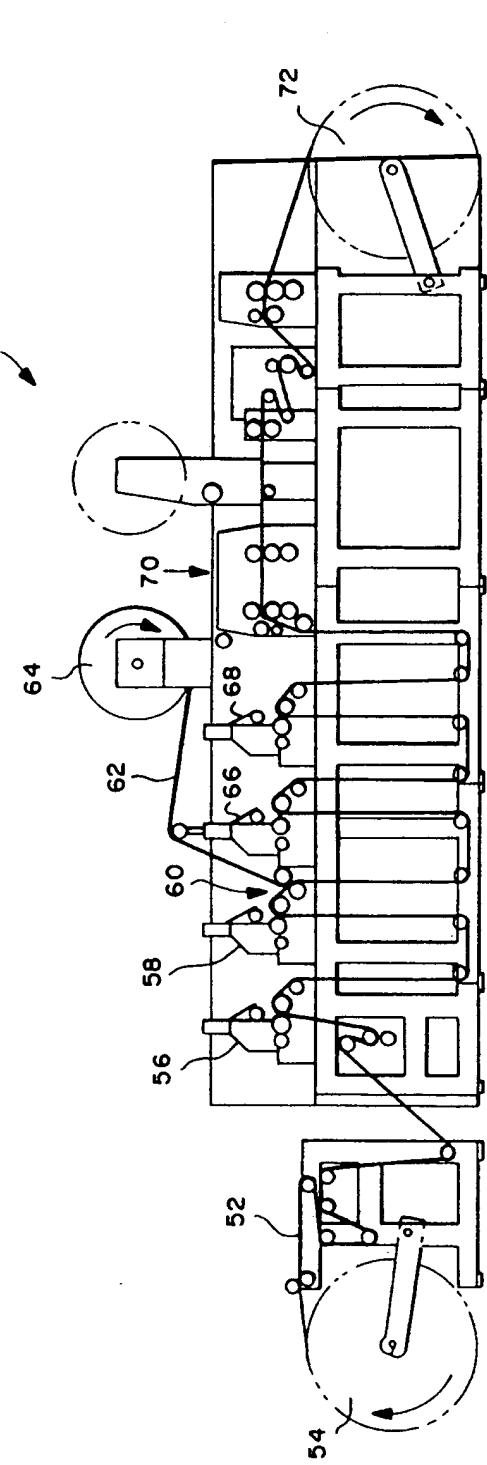


FIG. 4





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EUROPEAN SEARCH REPORT

Application Number
EP 93 30 8539

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.)
A	US-A-4 986 868 (E. SCHMIDT) * column 2, line 58 - column 3; figures 6,8 *	1,8,9	G09F3/02 G09F3/10 B31D1/02
A	EP-A-0 418 607 (LTS LOHMANN THERAPIE SYSEME) * column 4, line 29 - column 5; figures 1,2,5 *	1,8	
A	GB-A-969 149 (DENNISON MANUFACTURING CO.) 9 September 1964 * column 2, line 30 - line 44; figures 1,2 *	1,8	
A	US-A-4 876 131 (R. E. ASHBY) * column 5, line 48 - column 6; figures 7,8 *	1,8,9	
A	US-A-5 139 836 (B. K. BURKE) * claim 1; figure 1 *	1,8,9	
	-----		TECHNICAL FIELDS SEARCHED (Int.Cl.)
			G09F B31D
<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	4 March 1994	Hulne, S	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons A : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			